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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/032,105	12/21/2001	Xiaoyun Zhu	10013755 -1	5883

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EXAMINER
PEARSON, YVETTE B

ART UNIT	PAPER NUMBER
2144	

DATE MAILED: 03/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/032,105	ZHU ET AL.	
	Examiner	Art Unit	
	Yvette Pearson	2144	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 December 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 - 22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *December 21, 2001* is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1 - 22 are presented for examination in the application.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 – 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Altschuler et al. (US 6,012,052).

3. As per Claims 1 and 18, Altschuler teaches a network resource assignment method for establishing a resource model for gathering information associated with networked resources ([building resource link topology templates] Column 3, Lines 60 – 65); acquiring an application model for extracting information associated with application functional components ([building resource transition probability models] Column 7, Lines 57 – 67; Column 8, Lines 1 - 9); and utilizing a mapping process wherein mapping is directed to increasing the optimization of resource utilization through appropriate resource assignment ([optimizing the navigation of resources] Column 4, Lines 4 – 11.)

4. As per Claim 2, Altschuler teaches a network resource assignment method as disclosed above, further comprising a set of parameters associated with the network

topology and performance characteristics of a resource request ([an *exemplary* data structure for communicating a resource request] Column 22, Lines 14 – 21; Figure 17); and acquiring information about resource requirements of an application ([resource size field] Figure 17, #1760.)

5. As per Claim 3, Altschuler teaches a network resource assignment method as disclosed above in Claim 2, further comprising the resource parameters of the network topology to include switches and server nodes (Column 9, Lines 55 – 58; Figure 3), and defines the connectivity matrices between the different layers (Figure 4) such that the specification of the bandwidth limits ([resource size field] Column 22, Lines 40 – 46; Figure 17, #1760) of the incoming and outgoing resources link at various layers of the network ([Edge Switches], Figure 3, #350, #360, #370, #380.)

6. As per Claim 4, Altschuler teaches a network resource assignment method as disclosed above in Claim 2, further comprising information about resource requirements of an application ([resource transition probability models] Column 5, Lines 33 – 35; Figure 1) that include:

a). the number of application functional components ([HTML page that includes link to other resources] Column 4, Lines 42 - 48),

b). the network traffic requirements between said application functional components ([link topology based on resource or attribute transition probabilities] Column 4, Lines 48 - 57); and

c). the bounds on server attributes required for the server to host the application component ([The Resource Transition Model determines resource transitioning

such that a probability value depicts a transitioning probability such to pre-fetch resources or to remove resources irrelevant to transitioning] Column 7, Lines 57 – 67; Column 9, Lines 38 – 44; Column 10, Lines 42 – 45.)

7. As per Claim 5, Altschuler teaches a network resource assignment method as disclosed above in Claim 1, further comprising a mapping process to determine which server nodes are assigned to an application functional component ([resource transitioning illustrated by graph nodes corresponding to resources] Column 9, Lines 55 – 58; Figure 3) and is captured in an assignment decision variable ([data structure of resource transitioning] Column 10, Lines 42 – 45; Figure 4.)

8. As per Claims 6, 7 and 8, Altschuler teaches a network resource assignment method as disclosed above in Claim 5, wherein the assignment decision variable ([Transition Probability] Figure 4) is optimized in accordance with meeting application requirements (edit resource transition possibilities to optimize the navigation of resources at a server); minimizes communication delays (pre-fetch, and cache at a client or server, resources to better utilize processing, data bus, and communications resources); and utilizing a Layered Partitioning and Pruning algorithm (*a local clustering scheme to find relatively optimized solutions*) to find an application resource assignment solution ([attribute transition models may be transmitted to and clustered at a proxy in accordance with other proprietary clustering algorithms] Column 5, Lines 19 – 29.)

9. As per Claims 9 and 14, Altschuler discloses a computer readable medium ([apparatus] Column 3, Lines 60 - 64) for:

a). Analyzing a desirable assignment configuration to Determine if there are enough feasible servers ([Resource Transition Model may be used by an appropriately configured system to pre-fetch and cache resources] Column 7, Lines 57 – 67; Figure 12, #758);

b). Saving an optimal feasible assignment variable in an application mapping template ([building resource link topology templates] Column 4, Lines 4 – 10; Figure 12, #756), and Sending the assignment variable to an application deployment service ([Resource Retrieval Process] Figure 12, #660); and

c). Computing remaining resources initiated by client requests based on the addition or removal of resources by updating a resource configuration template ([edit resource link topology] (Column 4, Lines 4 – 10; Figure 12, #1222),

that is executed by a computer system whereby the computer implements a network resource assignment process ([Resource Transition Probability Model Building Process] Column 23 Lines 43 – 67; Column 24, Lines 1 – 7; Figure 12.)

10. As per Claim 10, Altschuler teaches a network resource assignment method as disclosed above in Claim 9, further comprising determining if there are enough feasible servers ([Resource Transition Model may be used to build resource link topology templates] Column 7, Lines 57 – 67; Figure 12, #758) and send application to another resource center to optimize the navigation of resources ([resource transition possibilities {link topology}] Column 4, Lines 4 – 10, Lines 42 – 57.)

11. As per Claim 11, Altschuler teaches a network resource assignment method as disclosed above in Claim 9, wherein parameters are entered into an algorithm to search

for a optimal feasible assignment variable ([attribute transition models utilizing attribute parameters may be transmitted to and clustered at a proxy in accordance with other proprietary clustering algorithms] Column 5, Lines 19 – 29; Figure 25, #2550.)

12. As per Claim 12, Altschuler teaches a network resource assignment method as disclosed above in Claim 9, further comprising an indication that there is not enough network bandwidth without optimal assignment variable such that resource is sent to another resource center ([resource transition possibilities {link topology} to optimize the navigation of resources] Column 4, Lines 4 – 10, Lines 42 – 57.)

13. As per Claim 13, Altschuler teaches a network resource assignment method as disclosed above in Claim 9, wherein the optimization problem is formulated with the objective of minimizing the average communication delay ([better utilized bandwidth of communications channels] Column 4, Lines 4 – 10.)

14. As per Claim 15, Altschuler teaches a network resource assignment method as disclosed above in Claim 14, wherein the a current resource mapping template is read and compared to resource requirements to obtain change requirements (Column 24, Lines 28 –31; Figure 12, #756, #1222, #758.)

15. As per Claim 16, Altschuler teaches a network resource assignment method as disclosed above in Claim 14, wherein a resource removal algorithm is used to find an optimal set of servers ([Resource Transition Model determines resource transitioning such that a probability value depicts a transitioning probability such to remove resources irrelevant to transitioning] Column 8, Lines 33 – 36; Figure 1, #140, #150); to update a resource mapping file with the removed resource and compute remaining resources

with updated resource configurations (transition models are compared to resource requirements to obtain change requirements (Column 24, Lines 25 –31; Figure 12, #756, #1222, #758.)

16. As per Claim 17, Altschuler teaches a network resource assignment method as disclosed above in Claim 14, further comprising:

a). Determining if there are enough feasible servers ([Resource Transition Model may be used by an appropriately configured system to pre-fetch and cache resources] Column 7, Lines 57 – 67; Figure 12, #758);

b). Calling an algorithm to find an optimal set of servers captured in an assignment decision variable ([data structure of resource transitioning] Column 10, Lines 42 – 45; Figure 4.)

c). Acquiring information about resource requirements of an application to provide indication that there is not enough network bandwidth ([resource size field] Column 38, Lines 55 – 59, Lines 63 – 67; Figure 17, #1760.)

d). Updating the resource mapping file with the additional variable if search is successful and sending the resource mapping file to a server adding service to compute remaining resources and updating resource transition probabilities (Column 23, Lines 65 – 67; Column 24, Lines 8 - 19 ; Figure 12),

17. As per Claim 19, Altschuler teaches a network resource assignment method as disclosed above in Claim 18, wherein a assigning application components to available networked resources are identified with respect to application constraints and objectives ([an *exemplary* data structure for communicating a resource request] Column 22, Lines

14 – 21; Figure 17); and acquiring information about resource requirements of an application ([resource size field] Figure 17, #1760.)

18. As per Claim 20 - 22, Altschuler teaches a network resource assignment method as disclosed above in Claim 18, wherein information associated with available networked resources includes configuration and performance characteristics of available networked resources such that the resource parameters of the network topology to include switches and server nodes (Column 9, Lines 55 – 58; Figure 3), and defines the connectivity matrices between the different layers (Figure 4) whereby the specification of the bandwidth limits ([resource size field] Column 22, Lines 40 – 46; Figure 17, #1760) of the incoming and outgoing resources link at various layers of the network ([Edge Switches], Figure 3, #350, #360, #370, #380.)

19. Thus, Altschuler discloses all limitations of the rejected claims; therefore Altschuler anticipates the subject matter of Claims 1 – 22.

Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

21. US 6,477,566, (Davis et al.) discloses a Network Management System that provides improved data networking between a disparate network elements.

22. US 6,308,208, (Jung et al.) discloses a Network Monitoring System that utilizes distributed cellar agents to monitor distributed network resources.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yvette Pearson whose telephone number is 571 272-4227. The examiner can normally be reached on 9:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Cuchlinski can be reached on 571 272-3925. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Yvette Pearson

Examiner

Art Unit 2144

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